

PRIZE SUBJECTS OF THE PARIS SOCIÉTÉ
D'ENCOURAGEMENT.

THE June number of the *Bulletin de la Société d'Encouragement pour l'Industrie Nationale* contains the programme of prizes and medals proposed by the Society for 1901 and following years. The questions proposed for solution cover a large field; omitting many which have only a local interest, the chief problems suggested as prize subjects for 1901 are as follows. In Mechanics, prizes of 2000 francs for a motor weighing less than 50 kilograms per horse-power developed; for an important advance in mechanical methods of transmitting energy; and for automobiles suitable for use in towns and in the country respectively, the conditions laid down for the motor car suitable for towns requiring the absence of fumes or smell, and in the case of the one for use in the country, only such fuel to be used as can ordinarily be obtained in country towns. In Chemistry, a prize of 1000 francs for the utilisation of any waste product; of 2000 francs for a publication useful to chemical or metallurgical industry; two prizes of 500 francs each for scientific researches in chemistry, of which the results can be utilised in industrial work; a prize of 2000 francs for an improvement in the manufacture of chlorine; one of 1000 francs for the discovery of a new alloy useful in the arts; and of 2000 francs for a study of the expansion, elasticity, and tenacity of pottery clays and glazes, for a scientific study of the physical and mechanical properties of glass, for a new method of manufacturing fuming sulphuric acid and sulphur trioxide, and for the manufacture of a steel by the introduction of a foreign element possessing specially useful properties. In the Economical Arts, 2000 francs for an invention of new methods allowing of the utilisation for lighting and heating, either for domestic or industrial purposes, of petroleum, density not less than 0.800; 2000 francs for a continuous extractor; 3000 francs for a method of purifying water for domestic use; and 2000 francs for a 2-candle power incandescent electric lamp fulfilling certain special conditions.

Other prizes offered include one of 2000 francs for the best study of the diseases of cider and the means of preventing or arresting their development; of 3000 francs for the invention of a method allowing of the production of an indefinite number of positives in colours either by a direct method or with a Lippmann negative; of 2000 francs for a memoir on the silk industry in the Lyons region; of 1500 francs for a memoir on the cycle industry; and of 3000 francs for a study of commercial syndicates.

According to the general conditions for these prizes, all memoirs must be sent in before December 31, they must be written in the French language, and are open to persons of all nationalities.

UNIVERSITY AND EDUCATIONAL
INTELLIGENCE.

TEACHERS in Schools of Science and Technical Schools will find a Diary and Calendar just issued by Messrs. Philip Harris and Co., scientific instrument makers, Birmingham, a convenient little pocket-book. The diary is for the year commencing on September 1, and ending August 31, 1901. The dates are given of examinations in science and technology, and memoranda referring to the days on which official papers must be sent in are brought together in a calendar. The book is thus a real *vade mecum* for science teachers.

THE following Saturday morning courses for teachers have been arranged by the London Technical Education Board. A course of about ten lectures on the teaching of mathematics will be given by Prof. Hudson at King's College. The object of these lectures is to help those who are practically engaged in teaching, and wish to become acquainted with modern methods and improvements in order to render their teaching more effective. A course on physics will be given under the direction of Prof. W. Grylls Adams and Mr. S. A. F. White. The course will consist of practical work in the Wheatstone Laboratory, the object of the instruction being to enable students to obtain an intimate knowledge of the methods employed in physical measurements and familiarity with the use of apparatus. A course of twenty lectures on physiology will be delivered by Prof. Halliburton. The object of the

course is to acquaint teachers with the modern methods of teaching physiology by objective methods. A course of ten lectures on the teaching of physical geography, each lecture followed by a class for practical work, will be given by Miss Catherine A. Raisin, D.Sc., at Bedford College.

THE London Technical Education Board makes provision for advanced students as well as for those of elementary grades. During the coming session evening science courses will be held in connection with the Board at University College, King's College, and Bedford College. At University College, Prof. J. A. Fleming, F.R.S., will give a course of ten lectures, followed by laboratory practice, in advanced, electrical measurements. A course of lectures on the electric motor and its application in electric traction will be given by Prof. C. A. Carus-Wilson, each lecture to be followed by an experimental demonstration or by a class for the practical working of numerical examples in connection with the subject. A course will be given by Prof. E. Wilson, at King's College, on direct and alternating currents. In mechanical engineering, Prof. T. Hudson Beare will give a course of ten lectures, at University College, on the theory of steam engines and boilers, with laboratory work on the testing of steam engines and boilers. Prof. Beare will also give a course of five lectures on the theory of gas and oil engines, combined with laboratory work. A course of five lectures on water-tube boilers will be given by Mr. Leslie Robertson. A course will be delivered by Prof. D. S. Capper and Mr. H. M. Waynworth in the mechanical engineering laboratories of King's College. The course will consist of about twenty demonstrations upon steam and gas engines and general laboratory work. The latter portion of each evening will be devoted to experimental and practical work in the engineering laboratory in illustration of the lectures. A course on civil engineering will be delivered by Prof. Robinson. The methods of producing artificial cold will be the subject of a course of lectures to be delivered at University College by Dr. W. Hampton. At the same college, Mr. E. C. C. Baly will deliver eight lectures dealing with the methods of spectroscopy, especially in connection with the photography of the spectrum.

HER MAJESTY'S Commissioners for the Exhibition of 1851 have made the following appointments to Science Research Scholarships for the year 1900, on the recommendation of the authorities of the respective universities and colleges. The scholarships are of the value of 150*l.* a year, and are ordinarily tenable for two years (subject to a satisfactory report at the end of the first year) in any university at home or abroad, or in some other institution approved of by the Commissioners. The scholars are to devote themselves exclusively to study and research in some branch of science, the extension of which is important to the industries of the country. A limited number of the scholarships are renewed for a third year where it appears that the renewal is likely to result in work of scientific importance. The new scholars and their nominating institutions are as follows:—C. E. Fawsitt, B.Sc. (University of Edinburgh), V. J. Blyth, M.A. (University of Glasgow), J. Moir, M.A., B.Sc. (University of Aberdeen), W. M. Varley, B.Sc. (Yorkshire College, Leeds), J. C. W. Humfrey, B.Sc. (University College, Liverpool), S. Smiles, B.Sc. (University College, London), N. Smith, B.Sc. (Owens College, Manchester), L. L. Lloyd (University College, Nottingham), Alice Laura Embleton, B.Sc. (University College of South Wales and Monmouthshire, Cardiff), J. A. Cunningham, B.A. (Royal College of Science, Dublin), W. S. Mills, B.A. (Queen's College, Galway), J. Patterson, B.A. (University of Toronto), W. C. Baker, M.A. (Queen's University, Kingston, Ontario), J. Barnes, M.A. (Dalhousie University, Halifax, Nova Scotia), J. J. E. Durack, B.A. (University of Sydney). Seventeen scholarships granted in 1898 and 1899 have been continued for a second year on receipt of a satisfactory report of work done during the first year. The names of the scholars and the places where they are studying are as follows:—J. C. Irvine, B.Sc. (University of Leipzig), H. L. Heathcote, B.Sc. (University of Leipzig), Winifred Esther Walker, B.Sc. (University College, London), F. W. Skirrow, B.Sc. (University of Leipzig), C. G. Barkla, B.Sc. (Cavendish Laboratory, Cambridge), Harriette Chick, B.Sc. (Thompson-Yates Laboratories, University College, Liverpool), F. A. Lidbury, B.Sc. (University of Leipzig), W. Campbell, B.Sc. (Royal College of Science, South Kensington), L. Lownds, B.Sc. (University of Berlin), J. T. Jenkins, B.Sc. (University of Kiel and Biological Institution,